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Parental solicitation, parental control, child disclosure, and substance use: native and immigrant Dutch adolescents

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ABSTRACT

Objectives. The present study examined whether the relation of parental solicitation, parental control, and child disclosure with adolescent alcohol and cannabis use is similar for native and non-Western immigrant Dutch adolescents.

Design. Questionnaire data from two study-samples were used with a combined sample of 705 adolescents (mean age 16.2 years; 47.2% female; 25.2% non-Western immigrant background).

Results. Native Dutch adolescents reported more weekly alcohol use than immigrant adolescents, while rates of cannabis use by native and immigrant adolescents were similar. Immigrant females reported lower levels of parental solicitation and child disclosure, but higher levels of parental control than native females. There were no differences in the sources of parental knowledge between native and immigrant males. Regression analyses showed no significant interaction effects of parental solicitation, parental control, or child disclosure with ethnic background for both alcohol and cannabis use (all p values > .05).

Conclusion. Despite mean level differences in various factors, we did not find evidence of an interaction effect of the sources of parental knowledge with ethnic background on alcohol and cannabis use. This suggests that theories and prevention strategies focusing on these sources of parental knowledge in relation to substance use can be applicable to both native and immigrant Dutch adolescents.

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Substance use during adolescence is associated with various undesirable consequences. Alcohol use during adolescence, for example, can have detrimental effects on brain functioning, causing attention and memory problems (White and Swartzwelder 2005), while the use of cannabis, the most widely used illicit drug in the world (European Monitoring Centre for

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Drugs and Drug Addiction 2013; United Nations Office on Drugs and Crime 2013), has been found to be related to mental health problems and poor educational attainment (Van Ours and Williams 2009, 2011; Verweij et al. 2013). Alcohol and cannabis use do not differ significantly between native versus immigrant adolescents aged 12–18 years in the Netherlands, with 36–47% past month alcohol use and 14–22% lifetime cannabis use (National Drug Monitor 2012). The exceptions are adolescents of Turkish and Moroccan origin, who use considerably less (8–16% past month alcohol use and 4–8% lifetime cannabis use; National Drug Monitor 2012). However, little is known about the universal importance of risk and protective factors related to substance use across different cultures and ethnicities. One of the risk factors forwarded in relation to adolescent substance use is the adolescent–parent relationship. With the increased ethnic diversity in Europe and the cultural differences in ascribed parental roles, the universality of their influence has been questioned.

Parents' knowledge of their children's whereabouts has been negatively related to maladaptive behaviors in native populations (e.g. Laird et al. 2008; Lac and Crano 2009; Moore, Rothwell, and Segrott 2010). When looking at three important sources of parental knowledge, that is, parental solicitation, where parents actively ask their children about their whereabouts, parental control, where parents control their children's whereabouts by using rules and restrictions, and child disclosure, where children voluntarily provide this information (Kerr and Stattin 2000; Stattin and Kerr 2000), a lack of child disclosure was found to be one of the most important factors in relation to maladaptive behavior (e.g. Keijsers et al. 2009, 2010; Vieno et al. 2009; Kerr, Stattin, and Burk 2010). However, parental solicitation was found to be most important in relation to antisocial behavior when adolescents spent more time unsupervised (Laird, Marrero, and Sentse 2010).

Studies addressing the relation between these sources of parental knowledge and substance use from a cultural perspective, by comparing native and immigrant subpopulations, are scarce. However, several theoretical models have been forwarded on potential ethnicity-related differences in overall effects of parenting.

The *no-group differences* hypothesis (Rowe, Vazsonyi, and Flannery 1994) states that there may be differences in mean levels of traits, but that correlations between these traits are similar between native and immigrant groups. According to this hypothesis, the associations are not expected to alter based on culturally specific environmental experiences, as all members of a society are exposed to the same factors in that society. Previous studies have found support for this hypothesis, stating that parenting practices have similar effects among native and immigrant subgroups on various adolescent outcomes (e.g. Amato and Fowler 2002; Wissink, Dekovic, and Meijer 2006).

By contrast, the cultural–ecological model suggests that there may be ethnic differences in the influence of aspects of the parent–child interaction on maladaptive outcomes. This model was developed by Ogbu (1981) and proposes that the goals that parents want to achieve for their children are the same across native and immigrant families (e.g. health and success). However, in order to achieve these goals, parents from different cultures may use different strategies, depending on their resources such as the childrearing theories of parent's culture on how best to raise children. According to this model, the association between different parenting behaviors and adolescent substance use may differ between native and non-Western immigrant families. As an example, previous studies have shown that different parenting styles may not have the same effects in all cultures. Kotchick and Forehand (2002) showed that authoritative parenting, a parenting strategy

characterized by reasoning and induction that is regarded as effective in Western families, is not always advantageous in non-Western immigrant families. In contrast, authoritarian parenting, characterized by restrictions and rules and viewed as a non-effective parenting strategy in Western families, can have positive results for non-Western immigrant children (Kotchick and Forehand 2002). A possible explanation for this difference is that in non-Western immigrant families, an authoritarian parenting style is positively related to warmth and support, while this relation is often negative or absent in Western families (Pels, Distelbrink, and Postma 2009).

Similar to authoritarian parenting, parental control as a source of parental knowledge (Kerr and Stattin 2000; Stattin and Kerr 2000) is also characterized by restrictions and rules. It might be that parental control, including similar aspects as authoritarian parenting, is positively related to warmth and support in Dutch immigrant families, but not in Dutch native families. Therefore, parental control could be related to positive outcomes for immigrant adolescents, while negatively or unrelated for native Dutch adolescents. In the Netherlands, immigrant mothers of various non-Western backgrounds on average have a more authoritarian view of childrearing and show more authoritarian control than native Dutch mothers (Pels and Nijsten 2003). Possibly, they also show higher levels of parental control. Although previous studies showed lower levels of parental supervision in immigrant families than native Dutch families (Pels, Distelbrink, and Postma 2009), no comparative studies have been conducted on levels of parental solicitation or control as sources of parental knowledge between native versus immigrant Dutch individuals. Previous studies that focused on child disclosure showed that in some immigrant groups children disclose less to their parents compared to native Dutch children (Pels, Distelbrink, and Postma 2009), while in other groups (e.g. Surinamese) the level is similar (Deković, Wissink, and Meijer 2004; Wissink, Dekovic, and Meijer 2006; Pels, Distelbrink, and Postma 2009). It is uncertain whether possible level differences in the sources of parental knowledge are related to ethnic differences in the associations between these sources and substance use. One US study found that the negative relation between parental control and cannabis use was stronger for African–American adolescents than for non-Hispanic White and Mexican American adolescents (Tragesser et al. 2007), suggesting that the importance of parental control in relation to substance use differs per ethnic group.

Not only the relation between parental control and substance use, but also the relation between parental solicitation and substance use could differ between native and immigrant adolescents. Immigrant Dutch adolescents, especially males, from various non-Western backgrounds have been found to be less supervised by their parents than native Dutch adolescents (Pels, Distelbrink, and Postma 2009). As mentioned previously, in the context of lack of supervision, parental solicitation was effective in preventing antisocial behavior (Laird, Marrero, and Sentse 2010). The same could be found for substance use, suggesting that the relation between parental solicitation and substance use might differ for native and immigrant adolescents.

Studying these relations could result in theories and prevention strategies that are better attuned to different cultures. However, there is a lack of studies that have focused on the relation between the three sources of parental knowledge and substance use in non-Western immigrant subpopulations in Europe. In the Netherlands, similar to most West-European countries (e.g. France, UK), immigrants mostly come from previously

colonized countries moving to their former colonizing country, or were recruited for guest work on temporary work contracts. As indicated above, parenting in the cultures of origin of these immigrant groups could differ from the Dutch host culture. To fill in the gap in the literature, this study aims to examine whether the relation of parental solicitation, parental control, and child disclosure with alcohol and cannabis use differs between native and non-Western immigrant Dutch adolescents. As differences in the mean level of the sources of parental knowledge are not immediate indicators for differences in the pattern of the relations between these sources and substance use, we expected that child disclosure is negatively related to substance use in both native and immigrant Dutch adolescents. In analogy with the results from the study by Laird, Marrero, and Sentse (2010) on antisocial behavior and the importance of parental solicitation when adolescents spent much time unsupervised, we hypothesized a stronger negative relation between parental solicitation and substance use in immigrant adolescents, who have been found to experience lower levels of parental supervision than native Dutch adolescents. As an authoritarian parenting style has been found to have a more positive effect on non-Western immigrant children compared to Western children (Kotchick and Forehand 2002), we also expected a significant difference in the link between parental control and substance use, in that the anticipated negative relation between parental control and substance use is stronger in immigrant adolescents than in native Dutch adolescents.

Method

Sample and respondents

Two different datasets were used to compare native Dutch adolescents with non-Western immigrant Dutch adolescents. In the Netherlands, the largest ethnic populations are Surinamese, Moroccan, Turkish, Antillean, and Asian (www.cbs.nl). Immigrant Dutch adolescents participated in i4culture, a project on risk factors of substance (ab)use and dependence in an immigrant population. Ethnicity status was based on country of birth of the participant, country of birth of (one of) the parents, or country of birth of both grandparents from one side of the family. Ethnicity status was marked as Dutch when all parties (participant, parent, or both grandparents) were born in the Netherlands, and non-Western when one or more of these parties were born in a non-Western country (i.e. Suriname, Morocco, Turkey, Antilles, or an Asian country). Islamic immigrant adolescents were excluded ($n = 132$, with 57.6% of Moroccan origin, 26.5% Turkish, 5.3% Surinamese, and 10.6% other), because of low levels of substance use (in our sample 15.2% lifetime alcohol use, and 6.8% past year cannabis use), indicating that Islamic adolescents who use substances constitute a different group compared to the other immigrant subpopulations. Islamic adolescents were omitted from further analyses as the Islamic religion is an important protective factor for alcohol and cannabis use, due to its prohibition of substance use (Michalak and Trocki 2006).

The Indonesia-Asian, Surinamese, and Antillean immigrants participating in i4culture originate from former Dutch colonies, and immigrated to the Netherlands since the nineteen-forties, nineteen-seventies, and nineteen-nineties, respectively. Chinese-Asian immigrants came to the Netherlands since the nineteen-thirties to fill the gaps in the lower segments of the Dutch labor market. Due to recruitment strategies at schools and

on the streets, some native Dutch adolescents were included in i4culture. In total, 67 native Dutch and 178 non-Western immigrant adolescents aged 15–17 years participated (mean age 16.5; 52.7% female). Immigrant participants had a Surinamese ($n = 64$, 36.0%), Antillean ($n = 32$, 18.0%), Asian ($n = 44$, 24.7%), or other non-Western background ($n = 38$, 21.3%). Due to power limitations when examining these groups separately, participants from these different ethnic backgrounds had to be combined into one non-Western, non-Islamic immigrant group. The immigrant adolescents of these various ethnic backgrounds had similar levels of parental solicitation (mean ranging from 2.8 to 3.0), parental control (ranging from 3.0 to 3.4), and child disclosure (3.3–3.4), and similar levels of alcohol use (weekly use ranging from 21.9 to 34.4%). Cannabis use appeared to differ between the subgroups, with 28.1% of Surinamese adolescents reporting cannabis in the past year, 15.6% of Antillean adolescents, 15.9% of Asian adolescents, and 44.7% of other non-Western immigrant adolescents.

To supplement the number of native Dutch adolescents, participants from the study Research on Adolescent Development and Relationships (RADAR) were included. We included 460 native Dutch adolescents from the fourth data wave (mean age 16.0; 44.1% female). There were some differences between the native Dutch adolescents from i4culture and RADAR (see Appendix A). Native Dutch adolescents participating in i4culture were somewhat older than those participating in RADAR ($M = 16.5$ versus $M = 16.0$), $t(72.5) = 5.18$, $p < .01$. Native Dutch females in i4culture reported more weekly alcohol use than females in RADAR, while native Dutch males in i4culture reported more cannabis use than males in RADAR. To control for these differences, we took cohort (i4culture versus RADAR) into account in the analyses.

Procedure

In i4culture, participants were recruited either via schools or at public areas like malls and subway stations. All participants lived in or around the cities of Amsterdam, Rotterdam, The Hague, or Utrecht. Informed consent was obtained from all respondents after the nature of the study had been explained. Respondents completed a questionnaire on paper (in the classroom) or through the Internet (via a link sent by e-mail). Confidentiality was emphasized by separating names from the questionnaire and reassuring respondents that no one other than the researchers would have access to the information they provided. All adolescents provided informed consent. Parents were informed and were given ample opportunity to object to their child's participation. I4culture was approved by the ethical board of the University of Amsterdam.

In RADAR, families were recruited via schools in or around the cities of Amsterdam, Rotterdam, The Hague, Utrecht, and Almere. In total, 497 families participated in the first data wave. Attrition was low, with 7.4% dropout from the first to the fourth wave. Parents provided written informed consent for each family member. Trained research assistants visited the families at home to conduct annual assessments. The adolescent, all family members and the adolescent's best friend completed a battery of questionnaires. In the present study, only adolescent self-reported questionnaires were included. RADAR was approved by the medical ethical committee of Utrecht University.

Measures

Alcohol use

Because of skewness of the variable in i4culture, alcohol use was divided into three categories: (0) *never use*, (1) *non-weekly use*, and (2) *weekly use*. In both studies, participants were first asked whether they had ever used alcohol. Those reporting to have never used alcohol comprised the group of never users (0). With the question 'On how many days in the past four weeks have you drank alcohol?' in both studies, alcohol users were divided into two different groups: those who reported to have used alcohol, but not weekly (1), and those who reported to have used alcohol weekly (2). As most participants reported using alcohol less than weekly, this category was set as the reference category.

Cannabis use

In both studies, past year cannabis use was assessed with the question 'How many times have you used cannabis in the past 12 months?' Response options ranged from 0 to 40 times or more. Because of skewness (73.6% reported no past year cannabis use), answers were dichotomized into (0) *Not used cannabis in the past year* and (1) *Used cannabis in the past year*.

Parental solicitation, parental control, child disclosure

Dutch translations (Keijsers et al. 2009) of items regarding parental solicitation, parental control, and child disclosure from the scales developed by Kerr and Stattin (2000; Stattin and Kerr 2000) were used. As not all questions were included in both studies, we only selected overlapping items (see Appendix B for selected items). Parental solicitation, that is, what parents ask, was measured with three questions (e.g. How often does your mother/father ask you about what happened during your free time?). Parental control, that is, rules parents set, was measured with five questions (e.g. Do you need to have your mothers'/fathers' permission to stay out late on a weekday evening?). Child disclosure, that is, what children voluntarily disclose, was measured with six questions (e.g. Do you talk to your mother/father about how you are doing in the different subjects in school?). Response options ranged from (1) *never* to (5) *always*. Scales were created by averaging the item scores. When one item in the scale was missing, the scale was created with the remaining items. When more than one item was missing, the total scale was set on missing for that participant. Questions were asked separately for mother and father. In i4culture, the answer categories on parental control included the option 'I do not do this,' which was recoded as missing, resulting in an extra $n = 24$ missing on parental control in i4culture. These participants were included in the total sample, because of their valuable information on parental solicitation and child disclosure. Reliabilities were good. Cronbach's α (calculated separately for mothers and fathers, and native and immigrant Dutch adolescent) ranged from 0.77 to 0.86 for parental solicitation, from 0.83 to 0.88 for parental control, and from 0.75 to 0.82 for child disclosure. As correlations between reports for mothers and fathers were high (ranging from 0.60 to 0.69 for native parents, and from 0.63 to 0.76 for immigrant parents), item scores for mother and father were averaged.

Statistical analysis

Statistical analyses were performed using the Statistical Package of Social Sciences version 20.0 for Windows (SPSS Inc., Chicago, IL). Means, percentages and χ^2 values of the outcome variables were ascertained per immigrant status and gender. Correlations were calculated between parental solicitation, parental control, and child disclosure. Then, we looked at differences in the sources of parental knowledge between native and immigrant Dutch participants using analyses of covariance (ANCOVAs). Because of the high correlation between the sources of parental knowledge, we tested for multicollinearity. VIF estimates were between 1.14 and 1.47, and tolerance values were between 0.68 and 0.88, indicating that the three sources could be analyzed in one model (Hair et al. 1995). To test our research hypotheses a series of logistic regression models were fitted. For alcohol use, we used a multinomial logistic regression analysis to analyze the relation between the sources of parental knowledge and alcohol use. We first estimated the main effects of the sources of parental knowledge (step 1), followed by testing for moderation by ethnicity (step 2). For cannabis use, a similar approach was used. Given the binary outcome, we used logistic regression analysis. Models were adjusted for gender, age, religion, and cohort (i4culture versus RADAR).

Results

Descriptive statistics

Combining the two datasets of i4culture and RADAR yielded a total sample of 705 adolescents aged 15–17 years (mean age 16.2; 47.2% female; 25.2% immigrant background). Gender distribution was equal across native Dutch and immigrant participants ($\chi^2(1) = 3.12$, $p > .05$). On average, immigrant participants were somewhat older than the native Dutch participants ($M = 16.6$ versus $M = 16.1$), $t(220.94) = -7.12$, $p < .05$, and more often religious (61.0%) than native Dutch adolescents (38.8%), $\chi^2(1) = 26.40$, $p < .05$.

The means and percentages of substance use are given in Table 1. We found that 90 (12.8%) adolescents reported no lifetime alcohol use, 411 (58.5%) reported non-weekly alcohol use, and 201 (28.6%) reported weekly alcohol use. Chi square values on these categories indicated that native Dutch male and female alcohol users reported more weekly alcohol use than immigrant male (χ^2 (2) = 38.53, $p < .01$) and immigrant female (χ^2 (2) = 10.90, $p < .01$) users, respectively. Past year cannabis use was reported by 186 (26.4%) adolescents. Native Dutch males and females were not more likely to report cannabis use than immigrant males (χ^2 (1) = 0.94, $p = .33$) or females (χ^2 (1) = 1.47, $p = .23$), respectively.

The means and SDs of the sources of parental knowledge are given in Table 1. Immigrant adolescents reported less parental solicitation ($M = 2.86$) than native Dutch adolescents ($M = 2.92$), $F(1,694) = 11.30$, $p < .01$, while parental control and child disclosure did not differ significantly between these groups. Because levels of the sources of parental knowledge can differ between males and females (Kerr and Stattin 2000), we also examined sex differences. As shown in Table 1, immigrant females reported lower levels of parental solicitation ($M = 2.84$ vs. $M = 3.01$) and child disclosure ($M = 3.30$ vs. $M = 3.69$), but higher levels of parental control ($M = 3.58$ vs. $M = 3.25$) than native females (all p values $< .05$). There were no differences in parental knowledge between native and immigrant

Table 1. Descriptives (counts and %) and differences (χ^2) of Dutch native and immigrant reports of substance use per gender and ANCOVA of sources of parental knowledge per gender and interaction of background and gender, controlling for age, religion, and cohort.

	Dutch native adolescents		Dutch immigrant adolescents		χ^2 native versus immigrant adolescents		
	Males	Females	Males	Females	Native vs. immigrant males	Native vs. immigrant females	
Alcohol							
No alcohol use	23 (8.0%)	20 (8.4%)	29 (34.5%)	18 (19.1%)	38.53**	10.90**	
Non-weekly alcohol use	161 (56.1%)	169 (71.3%)	30 (35.7%)	51 (54.3%)			
Weekly alcohol use	103 (35.9%)	48 (20.3%)	25 (29.8%)	25 (26.6%)			
Cannabis							
Past year cannabis use	88 (30.4%)	51 (21.4%)	21 (25.0%)	26 (27.7%)	0.94	1.47	
Parental knowledge					*F value native vs. immigrant adolescents*		*F value interaction background and gender*
Parental solicitation	2.84 (0.77)	3.01 (0.82)	2.89 (0.93)	2.84 (1.03)	3.68	6.98**	1.65
Parental control	2.93 (0.92)	3.25 (1.00)	2.81 (1.12)	3.58 (1.04)	0.21	8.37**	6.99**
Child disclosure	3.36 (0.67)	3.69 (0.72)	3.41 (0.81)	3.30 (0.89)	0.86	6.68*	12.34**

Note: **$p < .01$, *$p < .05$.

males. Interactions of background with gender were significant for parental control and child disclosure. The correlations between the sources of parental knowledge are given in Table 2, for native Dutch (below diagonal) and immigrant adolescents (above diagonal). Between alcohol and cannabis use we calculated a χ^2 (2) = 93.65, $p < .01$.

Parental knowledge and alcohol use

The results of the relation between the sources of parental knowledge and alcohol use can be found in Table 3. In the first step, we added the main effects of parental knowledge, ethnic background, and gender. Results showed that higher levels of parental solicitation were related to higher levels of alcohol use (Odds Ratio [OR] = 0.59, 95% Confidence Interval [CI] = 0.39–0.90, $p = .02$ for never vs. non-weekly use; OR = 1.45, 95%CI = 1.09–1.94, $p = .01$ for weekly vs. non-weekly use), and higher levels of child disclosure were related to lower levels of alcohol use (OR = 1.96, 95%CI = 1.24–3.10, $p < .01$ for never vs. non-weekly use; OR = 0.56, 95%CI = 0.41–0.76, $p < .01$ for weekly vs. non-weekly use). Higher levels of parental control were related to a lower likelihood of weekly alcohol use (OR = 0.77, 95%CI = 0.62–0.94, $p = .01$). Ethnic background was marginally related to never use compared to non-weekly use (OR = 0.32, 95%CI = 0.09–1.11, $p = .07$), with immigrant adolescents being more likely to report never use of alcohol than native adolescents. Gender was related to weekly alcohol use compared to non-weekly use (OR = 1.88, 95%CI = 1.27–2.79, $p < .01$), indicating that males are more likely to report weekly alcohol use than females.

To test our study hypotheses, we included interaction effects of sources of parental knowledge × ethnic background. Results showed no significant interaction effects (all p values > .05) (see Table 3, step 2).

To shed more light on the surprising finding of the positive relation of parental solicitation with alcohol use, we looked at univariate relations. When excluding child disclosure and parental control, parental solicitation was not related to never use ($p = .37$) or weekly alcohol use ($p = .56$) relatively to non-weekly use, indicating a suppressor effect. Only when including child disclosure, there was a significant positive relation between parental solicitation and alcohol use.

Parental knowledge and cannabis use

Results of the relation between the sources of parental knowledge and cannabis use are shown in Table 4. In the first step we estimated the main effects of the three sources of parental knowledge, ethnicity and gender. Results again showed a significant positive relation between parental solicitation and past year cannabis use and a significant negative

Table 2. Correlations between the sources of parental knowledge for native Dutch (below diagonal) and immigrant adolescents (above diagonal).

	Parental solicitation	Parental control	Child disclosure
Parental solicitation	–	0.36**	0.55**
Parental control	0.35**	–	0.21*
Child disclosure	0.48**	0.24**	–

Note: ** $p < .01$, * $p < .05$.

Table 3. Multinomial logistic regression sources of parental knowledge and alcohol use.

		OR	95% CI	*p*
Never				
Step 1	Parental solicitation	0.59	0.39–0.90	.02
	Parental control	0.76	0.56–1.04	.08
	Child disclosure	1.96	1.24–3.10	< .01
	Ethnic background	0.32	0.09–1.11	.07
	Gender	1.46	0.80–2.65	.22
Step 2	Parental solicitation × ethnic background	0.45	0.19–1.08	.07
	Parental control × ethnic background	1.16	0.62–2.15	.65
	Child disclosure × ethnic background	1.76	0.68–4.53	.24
Weekly				
Step 1	Parental solicitation	1.45	1.09–1.94	.01
	Parental control	0.77	0.62–0.94	.01
	Child disclosure	0.56	0.41–0.76	< .01
	Ethnic background	0.94	0.45–2.00	.88
	Gender	1.88	1.27–2.79	< .01
Step 2	Parental solicitation × ethnic background	1.06	0.54–2.10	.86
	Parental control × ethnic background	1.02	0.63–1.63	.95
	Child disclosure × ethnic background	0.84	0.41–1.75	.65

Note: Reference category is non-weekly alcohol use. Step 1, Nagelkerke $R^2 = 0.18$; Step 2, Nagelkerke $R^2 = 0.18$.

relation between child disclosure and cannabis use. Parental control was not related to cannabis use. To test our research hypotheses on ethnic specific effects of parental knowledge on cannabis use, the interaction term of parental knowledge × ethnic background were added to the model. None of these product terms were significant (all *p* values > .05).

Again, in a univariate analysis, a suppressor effect was found – when child disclosure and parental control were excluded from the model, parental solicitation was no longer related to cannabis use ($p = .36$).

Discussion

The aim of the present study was to examine differences between native Dutch and non-Western immigrant adolescents in the relation of parental solicitation, parental control, and child disclosure with alcohol and cannabis use. Our results showed that although there were differences between native and immigrant Dutch adolescents in mean levels of the various factors, we did not find an interaction effect of parental solicitation, parental control, and child disclosure with ethnic background on alcohol and cannabis use.

Several differences in mean levels of the factors of interest in this study were found for the two groups. Native Dutch adolescents reported more alcohol use than immigrant

Table 4. Logistic regression sources of parental knowledge and cannabis use.

		OR	95% CI	*p*
Step 1	Parental solicitation	1.92	1.41–2.61	< .01
	Parental control	0.87	0.70–1.09	.23
	Child disclosure	0.24	0.17–0.35	< .01
	Ethnic background	1.12	0.53–2.39	.77
	Gender	0.99	0.65–1.49	.94
Step 2	Parental solicitation × ethnic background	1.32	0.64–2.72	.45
	Parental control × ethnic background	0.93	0.58–1.48	.74
	Child disclosure × ethnic background	0.70	0.30–1.62	.40

Note: Step 1, Nagelkerke $R^2 = 0.24$; Step 2, Nagelkerke $R^2 = 0.24$.

adolescents. Past year cannabis use prevalence was, as found previously, similar across adolescents from both groups. Moreover, we found that native and immigrant adolescents reported similar levels of child disclosure. This is in line with other studies on sources of parental knowledge in immigrant populations in the Netherlands (Deković, Wissink, and Meijer 2004; Wissink, Dekovic, and Meijer 2006; Pels, Distelbrink, and Postma 2009). Our study further showed that immigrant girls reported lower levels of parental solicitation and higher levels of parental control than native Dutch girls, while no such differences were detected for boys. As immigrant families generally show a more authoritarian parenting style than native Dutch families (Pels and Nijsten 2003; Pels, Distelbrink, and Postma 2009), it is possible that immigrant parents rely more on parental control as a source of knowledge, particularly with regard to their daughter(s), than on parental solicitation.

The results on mean level of the sources of parental knowledge contrast with findings from previous research, which show that parental supervision is lower for immigrant boys than for native Dutch adolescents (Pels, Distelbrink, and Postma 2009). It is unknown why the results vary. Possibly, differences could be due to dissimilarities in the studied populations. For example, the conclusions in the review study by Pels, Distelbrink, and Postma (2009) were mainly based on studies focusing on Moroccan families, while ours focused on various non-Western immigrant families.

Despite ethnic differences in levels of sources of parental knowledge and frequency of alcohol use, we found no evidence for an interaction effect of parental solicitation, parental control, and child disclosure with ethnic background on alcohol and cannabis use. Our findings are in line with the *no-group difference* hypothesis, which proposes that members of a society are exposed to factors that are common to all ethnic groups in that society, regardless of cultural origin. This still means differences in cultures need to be taken into account. If control is *higher* and substance use is *lower* in immigrant youth than in native Dutch youth, then the association might become non-significant when looking at the total group.

Consistent with the conclusions of this study, previous studies also showed similar relations of several parenting and parent–child relationships with various other developmental outcomes in native and immigrant Dutch adolescents, including self-esteem and deviance (Amato and Fowler 2002; Wissink, Dekovic, and Meijer 2006). It therefore seems that risk and protective factors regarding parenting have a similar relation with various outcomes in native and non-Western immigrant Dutch adolescents. This indicates that theories and prevention strategies focusing on the relation between sources of parental knowledge and substance use are likely to be applicable to both native and non-Western immigrant Dutch adolescents. Possibly, these findings can be generalized to other youth from immigrant populations in European countries as well, although more research is needed.

As results showed no differences in the association of the sources of parental knowledge with alcohol and cannabis use, but show mean level differences in the sources of parental knowledge, it is important to stimulate those sources of parental knowledge that are related to lower levels of substance use. The association between higher levels of parental control and lower levels of weekly alcohol use indicates that it might be effective for prevention strategies to focus on increasing parental control in both native Dutch parents and immigrant parents. Additionally, the association between higher levels of child disclosure

and lower levels of alcohol and cannabis use for both native and immigrant Dutch adolescents indicates that enhancing child disclosure might also be an effective strategy. A Dutch longitudinal study showed that child disclosure is intertwined with parental solicitation (Keijsers et al. 2010), which might be related to the suppression effect in our study. Additionally, a Swedish longitudinal study showed that parents' positive and negative reactions to their child's disclosure predicted subsequent disclosure (Tilton-Weaver et al. 2010), suggesting that parents can play a role in eliciting child disclosure.

Some limitations of this study should be discussed. Because of power issues in the separate immigrant groups, we had to combine all non-Islamic, non-Western immigrants in this study, obscuring possible differences between adolescents from different ethnic backgrounds. Future research could focus on differences between immigrant subgroups in the associations between the sources of parental knowledge and substance use. Also, the native adolescent subgroup was much larger in size than the immigrant adolescent subgroup, which could lead to power issues. When looking at the 95% confidence intervals of the interaction terms, the intervals do not seem large enough to indicate that a larger sample would lead to significant differences. As power issues hindered the examination of three-way interactions including gender, future studies with a larger immigrant subgroup is needed to explore the impact of gender, especially as in immigrant families, girls have been found to be more monitored than boys (Pels, Distelbrink, and Postma 2009). Second, although not the main aim of the present study, the cross-sectional design makes it impossible to draw causal conclusions on the associations studied. Longitudinal studies focusing on ethnic differences are important for effective prevention and intervention strategies.

There are also limitations in the measures used in this study. In i4culture but not in RADAR, participants could answer 'I do not do this' in response to the parental control questions (e.g. going out on a Saturday night), later recoded as missing. However, excluding individuals with a missing value on parental control from the sample did not lead to changes in the results. Additionally, we could not control for social economic status, because the measures of SES were not comparable across the two studies. More generally, we relied solely on adolescent self-reported measures, which is subject to recall bias and can be influenced by social desirability. While research showed that self-report measures of substance use are generally reliable (Del Boca and Darkes 2003; Fendrich et al. 2004), it is unclear whether this also holds for immigrant subgroups, although research on immigrant subpopulations suggests that written questionnaires are more reliable than face-to-face interviews to assess alcohol use (Dotinga et al. 2004). Whether or not other response differences between native and immigrant adolescents exist is unclear, and deserves attention in future research. For example acquiescent response bias, which has been found to be an aspect of cultural communication style (Smith 2004), could influence the comparability of questionnaire data between native and immigrant populations. Finally, it is important to notify several differences between the RADAR study and the i4culture study. Participants in the i4culture study were on average slightly older, which might have had an influence on the predictor and outcome measures. Therefore, age was controlled for in all analyses. Also, different strategies for the recruitment of the participants of the two samples were used, which could have resulted in selection bias.

To conclude, this study showed that the relations between the sources of parental knowledge and substance use are similar across native and immigrant Dutch adolescents,

supporting the *no-group difference* hypothesis. Higher levels of parental solicitation were related to a higher likelihood of substance use; higher levels of parental control were related to a lower likelihood of weekly alcohol use; and higher levels of child disclosure were related to a lower likelihood of overall substance use. Possibly, these findings can be extended to other European countries.

Disclosure statement

The authors declare that they have no conflict of interest.

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Key messages

(1) Native Dutch adolescents reported more weekly alcohol use than non-Western immigrant adolescents.
(2) Immigrant females reported lower levels of parental solicitation and child disclosure, but higher levels of parental control than native females.
(3) We found no significant interaction effects of parental solicitation, parental control, or child disclosure with ethnic background for both alcohol and cannabis use.
(4) Theories focusing on the relation between sources of parental knowledge and substance use are likely to be applicable to both native and non-Western immigrant Dutch adolescents.

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Appendix A

Differences between the native Dutch respondents participating in i4culture and the native Dutch respondents participating in RADAR.

Gender

Dataset	Men	Women	χ^2	*p*
I4culture	32 (47.8%)	35 (52.2%)	1.55	.21
RADAR	257 (55.9%)	203 (44.1%)		
Total	289 (54.8%)	238 (45.2%)		

Age

Dataset	Mean age (SD)	T test	Df	*P*
I4culture	16.5 (0.76)	5.18	72.5	<.01
RADAR	16.0 (0.44)			

Alcohol use

	Dataset	Never	Non-weekly	Weekly	χ^2	*p*
Men	I4culture	4 (12.5%)	17 (53.1%)	11 (34.4%)	0.98	.61
	RADAR	19 (7.5%)	144 (56.5%)	92 (36.1%)		
	Total	23 (8.0%)	161 (56.1%)	103 (35.9%)		
Women	I4culture	3 (8.6%)	17 (48.6%)	15 (42.9%)	13.34	< .01
	RADAR	17 (8.4%)	152 (75.2%)	33 (16.3%)		
	Total	20 (8.4%)	169 (71.3%)	48 (20.3%)		

Cannabis use

	Dataset	Never use	Past year cannabis use	χ^2	*p*
Men	I4culture	15 (46.9%)	17 (53.1%)	8.74	< .01
	RADAR	186 (72.4%)	71 (27.6%)		
	Total	201 (69.6%)	88 (30.4%)		
Women	I4culture	25 (71.4%)	10 (28.6%)	1.24	.27
	RADAR	162 (79.8%)	41 (20.2%)		
	Total	187 (78.6%)	51 (21.4%)		

Parental solicitation, parental control, child disclosure

	Dataset	Mean	T test	Df	p
Parental solicitation	I4culture	3.28 (0.82)	4.02	525	< .01
	RADAR	2.86 (0.79)			
Parental control	I4culture	2.93 (0.98)	−1.09	514	.28
	RADAR	3.08 (0.97)			
Child disclosure	I4culture	3.51 (0.81)	−0.01	525	.99
	RADAR	3.51 (0.70)			

Appendix B

Items used in the current study to measure parental solicitation, parental control, and child disclosure.

Parental solicitation

How often do your parents ask you about what happened during your free time?
During the past month, how often have your parents initiated a conversation with you about your free time?
How often do your parents ask you to sit and tell them what happened at school on a regular school day?

Parental control

Do you need to have your parents' permission to stay out late on a weekday evening?
Do you need to ask your parents before you can decide with your friends what you will do on a Saturday night?
If you have been out very late one night, do your parents require that you explain what you did and whom you were with?
Do your parents demand that they know where you are in the evenings, who you are going to be with, and what you are going to do?
Before you go out on a Saturday night, do your parents require you to tell them where you are going and with whom?

Child disclosure

Do you talk with your parents about how you are doing in the different subjects in school?
Do you spontaneously tell your parents about your friends (which friends you hang out with and how they think and feel about various things)?
How often do you usually want to tell your parents about school (how each subject is going; your relationships with teachers)
Do you keep a lot of secrets from your parents about what you do during your free time?
Do you hide a lot from your parents about what you do during nights and weekends?
Do you like to tell your parents about what you did and where you went during the evening?